

REPORT ON A COLLECTION OF JAPANESE DIPTERA, PRESENTED TO THE U. S. NATIONAL MUSEUM BY THE IMPERIAL UNIVERSITY OF TOKYO.

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The collection of Diptera presented to the U. S. National Museum by the Imperial University of Tokyo, Japan, through Professor Mitsukuri, contains 629 specimens, representing 124 species, which are distributed in 83 genera and 26 different families. Of these 124 species, 12 were originally described from Japanese specimens; 6 of the others, although described from other countries, have heretofore been reported as occurring in Japan; of the remaining species, 52 were described from other countries than Japan and have not before been recorded from that country, while the remaining 54 species, or almost one-half of the entire number, are considered new to science and are duly characterized in the following pages.

As a whole, the species represented in this collection show a very close relationship to the fauna of Europe. Indeed, quite a large percentage of the species are identical, while others so closely resemble European forms that it becomes extremely difficult for one to decide the question of specific distinctness. A few species have extended their range northward from Malaysia or the East Indies, but these are not so numerous as one would be led to expect would be the case.

In addition to the species represented in this collection, an even 50 species have also been recorded from Japan; 35 of these were originally described from Japanese specimens. Assuming that no error has been made in these references, this will make a total of 174 species of Diptera now known from Japan—a ridiculously small number, which will no doubt be increased at least fivefold when the Empire is thoroughly explored for these and the other orders of insects. Baron Osten Sacken has recorded 250 species of Diptera from the Philippine Islands, and in addition to these, 51 species have been reported as occurring in these islands, making a total of 301 species. We should reasonably expect three or four times this number from a country so fertile and varied as Japan.

In order to complete, so far as possible, our knowledge of the Diptera of Japan, I add herewith a description of a new Syrphid from that country not represented in the collection from the university:

SPHIXIMORPHA PLEURALIS, new species.

Male and female: Head and its members black, the antennal style except its base, the lower corners of the front, and the face, except its upper edge and a median vitta, yellow; antennal process reddish brown, almost as long as the horizontal diameter of the head at its base, of an equal length with the first antennal joint; first two joints of antennae somewhat polished, the third opaque, yellowish-brown pruinose. Thorax black, a yellow spot on each humerus, and in the male with another at each end of the transverse suture of the mesonotum; scutellum black, margined with yellow. Abdomen black, the broad hind margins of the second and third segments and base of the second yellow, the narrow hind margin of the fourth reddish; petiole of abdomen short and thick, the second segment in the female three-fourths as long as wide, in the male slightly longer than wide. Legs black, the trochanters, broad apices of the femora, tibiae except a median band on each, and usually the tarsi, except the apex of each, yellowish-brown. Wings of male hyaline, the portion in front of the third vein and along the fifth in the second basal cell brown; in the female brown, the lower outer corner of the first basal cell, the first posterior cell except the front portion, the discal and third posterior cells except the base of each, also the whole of the second posterior cell, hyaline. Halteres yellow, the base of the peduncle brown. Length, 17 to 21 mm. Three males and one female, presented to the writer by Prof. Carl F. Baker, of Auburn, Alabama.

Type.—No. 3961, U.S.N.M.

The report in detail is as follows:

Family CULICIDAE.

CULEX SUBALBATUS, new species.

Female: Head and its members black, except the basal half of the second antennal joint, which is yellow; the first joint, and the occiput next the eyes, covered with white tomentum; proboscis curving downward toward its apex. Thorax brownish-black, the sides and several spots on the pleura covered with white tomentum, a tuft of black hairs above the insertion of each wing; scutellum, metanotum, and posterior angles of the thorax yellowish-brown. Abdomen brownish-black, thickly covered above with black tomentum, the under side of each segment bearing a fascia of silvery-white tomentum, which is prolonged upon the sides of the segments. Coxae yellowish-brown, the anterior sides of the front ones and the outer sides of the middle and hind ones covered with silvery-white tomentum; femora black, sometimes more

or less yellowish-brown, the under sides of the front and middle ones encroaching upon the posterior sides, also the under sides of the hind ones encroaching both on the anterior and posterior sides, covered with silvery-white tomentum; tibiae and tarsi black; inner claw of front tarsi slightly longer than the outer one and provided with a tooth on the under side, the outer claw destitute of such a tooth. Wings hyaline. Halteres yellow, the knobs brown.

Length, excluding the proboscis, 7 mm. Six specimens (No. 641).

Type.—No. 3962, U.S.N.M.

CULEX PALLENS, new species.

Female: Head yellowish brown; palpi brown, the base yellow; proboscis yellow; antennae brown, the first joint and base of the second yellow. Thorax yellowish-brown, the sides, posterior end, metanotum, and pleura yellowish, the sparse hairs and tomentum yellow; scutellum whitish. Abdomen yellow, its sparse hairs and tomentum also yellow. Legs, including the coxae, yellow; front tarsal claws of an equal size and destitute of a tooth on the under side. Halteres yellow, the knobs brownish-yellow. Wings hyaline, strongly iridescent.

Male differs from the female as follows: Palpi yellow, mottled with brownish-yellow; second joint of antennae and apical portion of joints 3 to 13 silvery-white; outer claw of front tarsi much shorter than the inner one, each bearing a tooth on the under side.

Length, 5 to 6 mm. Four females and six males (No. 640).

Type.—No. 3963, U.S.N.M.

Family TIPULIDAE.

LIBNOTES POECILOPTERA Osten Sacken.

Libnotes poeciloptera OSTEN SACKEN, Ann. Mus. Civ. Sto. Nat. Genova, February 4, 1881, p. 403.

A specimen of each sex (No. 635), agreeing well with the description. The species was originally described from Sumatra and Java. The genus has not heretofore been reported as occurring north of the Philippine Islands. Its former range extended from these islands southward to New Guinea and westward to Ceylon.

CONOSIA SUBSTITUTA Walker.

Limnobia substituta WALKER, List Dipt. Ins. Brit. Mus., 1848, Pt. 1, p. 39.

Two males and one female (No. 631), agreeing well with the short description. Walker's specimen was from China, and he placed it in the same group as *Limnobia punctata* Meigen, in which the small crossvein is near the base of the discal cell, whereas in the Japanese specimens it is beyond the tip of this cell. In another work, published

several years later,¹ this author located *Limnobia irrorata* of Wiedemann, which has the small crossvein as in the Japanese specimens, in a group which he distinguished from the one containing *Limnobia punctata* by the shape of the discal cell and the position of the posterior basal crossvein; and, as in this case he overlooked the great difference in the position of the small crossvein, it is altogether probable that the same thing occurred when describing *Limnobia substituta*. The genus *Conosia* was heretofore reported as extending from Ceylon to Java, Borneo and China, and westward to the Arabian desert.

LIMNOPHILA VARICORNIS, new species.

Male: Head black, opaque, gray pruinose, upper side of the rostrum yellow, palpi brown, antennae as long as the thorax, composed of 16 joints, brown, the third joint pale yellow. Thorax opaque, brownish-black, its posterior margin and that of the prothorax yellow; scutellum yellowish-brown, metanotum and pleura gray pruinose. Abdomen yellow, its hairs also yellow. Legs, including the coxae, yellow. Halteres yellow, the knobs, except their bases, brown. Wings hyaline, all of the veins and cells marked with numerous small brown spots; subcostal crossvein close to the tip of the auxiliary vein and opposite the small crossvein, the latter located at the proximal end of the discal cell, first section of the third vein as long as the last section, the second issuing from it at a less distance from the small crossvein than the length of this crossvein, petiole of the first submarginal cell one-seventh as long as this cell, of an equal length with the small crossvein, first vein at its tip curving forward to the costa and terminating in it, marginal crossvein at less than its own length from the end of the first vein; five posterior cells, the petiole of the second as long as the discal and two-thirds as long as the second posterior cell, base of the fourth posterior cell slightly more proximal than the base of the third, the posterior basal crossvein slightly before the middle of the discal cell.

Length, 10 mm. A single specimen (No. 631).

Type.—No. 3964, U.S.N.M.

ERIOCERA VERTICALIS Wiedemann.

Megistocera verticalis WIEDEMANN, *Ans. Zweif. Ins.*, 1828, I, p. 56.

A male specimen (No. 636), agreeing fairly well with the description. This species was originally described from Java, and has already been referred to the present genus by Osten Sacken.²

DICTENIDIA FASCIATA, new species.

Male: Head polished black, a large yellow spot on each side of the occiput, antennae black, 13 jointed, joint 3 bearing one, joints 4 to 12 each bearing two, long processes on the upper side; palpi brown.

¹ *Insecta Saund.*, Dipt., 1856, p. 436.

² *Berliner Ent. Zeitsch.*, 1886, p. 158.

Thorax and scutellum polished black, two yellow vittae on the mesonotum in front of the suture, a brown spot between the scutellum and insertion of each wing. Abdomen polished black, segments two to five, except a dorsal spot at the base of the second, bright yellow. Coxae black, femora yellow, the apices broadly black, tibiae yellow, the ends and a broad fascia near the middle of the hind ones black; tarsi black. Halteres yellowish-brown. Wings black, the base to the humeral crossvein yellow; a yellowish hyaline fascia crosses each wing between the apices of the anal and of the second posterior cell, and contains the black stigma; a hyaline vitta in the first basal cell before its middle, a subhyaline one in the second basal cell beyond its middle, and a second one in the center of the axillary cell.

Female: Differs from the male as follows: No yellow spots on the occiput; antennae 11-jointed, not furnished with processes, yellow except the first two joints; segments 2 and 5 of the abdomen black; apices of all of the posterior cells except the fifth, brown; no hyaline nor subhyaline vitta in the black portion of the wings.

Length, 13 to 14 mm. One specimen of each sex (No. 638).

Type.—No. 3965, U.S.N.M.

This genus has heretofore been represented by a single species which occurs in Europe, extending from Sweden to Italy.

TIPULA PARVA Loew.

Tipula parva LOEW, Wiener Ent. Monatsch., 1858, p. 102.

Three female specimens (Nos. 633, 634) agreeing quite well with the description, which was based on a male from Japan.

TIPULA NUBIFERA, new species.

Male: Head opaque, yellow, the lower portion of the occiput brown, rostrum, except the extreme base, brownish-black, palpi black, antennae simple, 13-jointed, shorter than the thorax, yellow, changing into brown at the tip. Thorax opaque, yellow, the prothorax marked with a brown dorsal spot and lateral vitta, the latter continued across the middle of the pleura; mesonotum in front of the suture marked with two brown spots, and on either side of these with a large oblong brown spot, behind the suture with two large brown spots, metanotum marked with a brown spot at the posterior end. Abdomen polished yellow, the sutures of the segments, a lateral vitta and a dorsal vitta on segments 4 to 7, black. Legs yellow, apices of the femora and tibiae, and the whole of the tarsi except their extreme bases, brown. Halteres yellowish, the knobs black. Wings gray, a whitish hyaline spot in center of first basal cell; another in center of the inner marginal cell, crossing the costal, and in the opposite direction encroaching upon the first basal cell; a third whitish spot in base of the outer marginal cell, crossing the submarginal and invading the first posterior cell; a fourth in base of discal cell, extending into the first basal; a fifth in apex of

first posterior cell; a sixth in second basal cell beyond the middle, contiguous to the fifth vein; a seventh in anal cell near its middle, finally one in each outer angle of the axillary cell; a distinct brown cloud at base of the third vein, another at the stigma, and a third larger one, filling the outer ends of the marginal and submarginal cells. Length, 32 mm. A single specimen (No. 632).

Type.—No. 3966, U.S.N.M.

PACHYRHINA VIRGATA, new species.

Male: Head opaque, yellow, the rostrum polished, the upper side of the front part reddish, a black spot on the occiput above the neck, palpi yellow, antennae brown, the first two joints yellow, joints 4 to 10 greatly constricted near the middle of their under sides (the apical portion of the antennae wanting in the single specimen before me). Thorax polished, yellow, mesonotum marked with three black vittae, of which the median tapers posteriorly and does not extend behind the suture; the lateral ones each consist of two contiguous lunate spots, an opaque brown spot on the outer side of the anterior end of each, another on the suture and a third on each side of the prothorax; scutellum black, a black dorsal vitta on the metanotum. Abdomen yellow, marked with an interrupted black dorsal vitta. Legs yellow, apices of the tibiae and the whole of the tarsi, brown. Halteres yellowish. Wings hyaline, subcostal cell yellowish, stigma brown. Length, 13 mm. A single specimen (No. 637).

Type.—No. 3967, U.S.N.M.

PACHYRHINA PALLORIS, new species.

Female: Differs from the above description of *virgata* only as follows: Black spot on the occiput reduced to a narrow vitta (antennae, except the two basal joints, wanting). Vittae of the thorax pale brown, the outer ones interrupted at the suture by a lunate velvet-black spot, the spot on the outer side of their anterior ends also velvet-black, prothorax unmarked, scutellum yellow, metanotum, except on the sides, yellowish-brown, a large yellow dorsal spot contiguous to the scutellum. Abdomen marked with a black vitta each side, in addition to the dorsal one. Wings having the costal and subcostal cells brown, the apex of the wing from slightly before the apex of the second vein to the apex of the fifth narrowly bordered with brown, the apices of the veins terminating in this part of the wing also narrowly bordered with brown. Length, 19 mm. A single specimen (No. 637).

Type.—No. 3968, U.S.N.M.

Family BIBIONIDAE.

BIBIO LEPIDUS Loew.

Bibio lepidus LOEW, Sys. Besch. Eur. Zweif. Ins., 1871, II, p. 32.

Four male specimens (No. 699), agreeing well with the description, which was founded on specimens from Great Britain.

BIBIO TENEBROSUS, new species.

Male and female: Black, except the wings, which are pale brown, the base, as far as the small crossvein, grayish-hyaline, the costal cell hyaline before the humeral crossvein and dark brown beyond it; stigma black in the male, dark brown in the female. Hairs of the eyes brown or black, those on the occiput and sides of the mesonotum black, on the pleura and sides of the abdomen at the base pale yellow. First, third, and first section of the fourth vein, also the small crossvein, dark brown, remaining veins yellow. Small crossvein less than two-thirds as long as the first section of the third vein. Hind tarsi of the male slightly swollen, the first joint as long as the next two joints taken together. Length, 9 to 12 mm. Four males and one female (No. 698).

Type.—No. 3969, U.S.N.M.

Family XYLOPHAGIDAE.

CHRYSOPILA DIVES Loew.

Chrysopila dives LOEW, Sys. Besch. Eur. Zwei. Ins., 1871, II, p. 62.

Four males (No. 695), agreeing well with the description, which was founded on specimens from Lake Baikal, Siberia.

CHRYSOPILA PULLATA, new species.

Male: Black, the third joint of the antennae yellow, halteres and abdomen yellowish brown, wings grayish, brown in the costal cell and dark brown at the apex of the wing, stigma brownish-black, first vein bordered with hyaline from the humeral crossvein nearly to the apex of the auxiliary vein, a whitish spot before the proximal end of the discal cell, one beyond the middle of that cell, another before the middle of the first submarginal cell, and a transverse row of five extending from the marginal to the third posterior cell, crossing the first posterior cell at its middle. All of the hairs black. Length, 6 mm. Two specimens (No. 697).

Type.—No. 3970, U.S.N.M.

LEPTIS FLAVIMEDIA, new species.

Male: Head black, the antennae, palpi, and proboscis yellow, hairs of palpi and on under side of head yellowish white, those on upper part of occiput black. Thorax yellow, the mesonotum, except on the sides and posterior end, black or brown, opaque, gray pruinose; hairs of mesonotum black, those of the pleura mixed yellow and black; scutellum yellow. Abdomen on the first four segments yellow, sometimes marked with a brown dorsal spot at the base of the third and fourth, remaining segments black. Legs, including the coxae, yellow, the front and hind tarsi, and middle ones except at the base, brown.

Halteres yellow. Wings yellowish-hyaline, the apex from the tip of the first vein to that of the fifth dark brown; stigma yellow, not well defined. Length, 8 mm. Three specimens (No. 693).

Type.—No. 3971, U.S.N.M.

ATHERIX IBIS Fabricius.

Atherix ibis FABRICIUS, Ent. Syst., Supp., 1794, p. 556.

Two male specimens (No. 696), agreeing well with others from France in the U. S. National Museum.

Family STRATIOMYIDAE.

SARGUS NIPHONENSIS Bigot.

Sargus niphonensis BIGOT, Ann. Soc. Ent. France, 1879, p. 221.

Four males and four females (No. 687), agreeing well with the description, which was founded on a specimen from Japan.

SARGUS TENEBRIFER Walker.

Sargus tenebrifer WALKER, List Dipt. Ins. Brit. Mus., 1849, Pt. 3, p. 517.

Seven females (No. 686). The species was originally described from China.

SARGUS AURIFER Walker.

Sargus aurifer WALKER, List Dipt. Ins. Brit. Mus., 1851, Pt. 5, p. 96.

A specimen of each sex (No. 690). The description of Walker was founded on specimens from Hindoostan and north China.

ODONTOMYIA STAUROPHORA Schiner.

Odontomyia stauraphora SCHINER, Reise Oesterr. Fregatte Novara, 1868, p. 59.

Three males and one female (No. 726), agreeing well with the description, which was founded on two female specimens from Hongkong, China.

STRATIOMYIA BARCA Walker.

Stratiomyia barca WALKER, List Dipt. Ins. Brit. Mus., 1849, Pt. 3, p. 530.

One male and nine females (No. 717). The species was originally described from China.

EPHIPPIUM TENEBRICA Walker.

Ephippium tenebrica WALKER, List Dipt. Ins. Brit. Mus., 1849, Pt. 3, p. 522.

Eleven males (No. 716), agreeing well with the description, which was based on a specimen from Java.

Family TABANIDAE.

SILVIUS DORSALIS, new species.

Female: Head black, gray pruinose, the face yellow, yellowish pruinose; frontal callosity oblong, reaching from the lowest ocellus nearly to the antennae, polished brownish-black; face on each side of the center with a polished brown spot; palpi yellow, covered with black hairs, proboscis brown, projecting nearly half its length beyond the oral margin; antennae yellow, the annulate portion of the third joint brown, becoming black at the apex, hairs of first two antennal joints and of the front black. Thorax on the upper side yellow, marked with three brown, gray pruinose vittae, the outer ones interrupted at the suture, each one-half as wide as the median, none of them reaching the posterior end of the mesonotum; pleura brown, marked with yellow, scutellum and metanotum yellow. Abdomen yellow, its hairs yellow and black. Legs yellow, apices of tarsi brown. Halteres yellow, the knobs brown. Wings hyaline, the costal margin and apex slightly yellowish, costal cell brown, the stigma yellow.

Length, 12 mm. Three specimens (No. 769).

Type.—No. 3972, U.S.N.M.

TABANUS CHRYSURUS Loew.

Tabanus chrysurus LOEW, Wiener Ent. Monatsch., March, 1858, p. 103.

Seven females (No. 718). The original specimens likewise came from Japan.

TABANUS TRIGONUS, new species.

Male and female: Head black, yellowish-gray pruinose, above the antennae white pruinose; front of female tapering anteriorly, at the narrowest point slightly narrower than the width of the first antennal joint at its base, the callosity polished black, lanceolate, the slender upper portion extending slightly over halfway to the occiput, no trace of an ocellar tubercle; antennae yellow, the first two joints brownish yellow and covered with black hairs, the annulate portion of the third brownish black, the tooth of this joint very large; palpi yellow, covered with black hairs, proboscis brownish black, hairs of occiput and on under side of head pale yellowish; eyes bare, the upper facets in the male very much larger than the lower ones. Thorax, pleura, and scutellum black, grayish pruinose, the short, sparse hairs yellow and black, humeri yellow. Abdomen on the first segment black, opaque, gray pruinose, the hind margin yellow; remaining segments polished, yellowish brown in the female, reddish yellow in the male, darkest toward the apex of the abdomen, segments 2 to 6 each bearing an opaque, light gray pruinose triangle in the middle, the bases of the triangles resting on the posterior margins of the segments, the posterior and lateral margins of these segments yellowish-gray pruinose and covered with yellow

hairs, as are also the gray triangles, hairs on the brown portion of the abdomen black; venter yellowish brown, the hind margins of the segments yellow. Legs black, the tibiae, with the exception of the apices of the front ones, yellow. Halteres yellowish brown. Wings yellowish gray, the centers of the cells usually hyaline, first posterior cell slightly narrowed at its apex, the anterior branch of the third vein bears a long appendage near the base, veins brown, stigma yellow; upper calypteres white, the lower ones yellowish brown.

Length, 22 to 28 mm. Eight males (No. 720) and ten females (Nos. 719 and 722).

Type.—No. 3973, U.S.N.M.

TABANUS TRIGEMINUS, new species.

Female: Differs from the above description of *trigonus* only as follows: Head above the antennae yellowish gray pruinose, antennae on the first two joints black, the tooth of the third unusually small; hairs of the occiput, on the under side of the head and on the pleura, white. Abdomen somewhat polished, black, the narrow posterior margins of the segments yellow, first segment thinly grayish-black pruinose, the middle of the dorsum opaque, light gray pruinose; segment 2 opaque, light gray pruinose except four large spots of the black ground color in a transverse row; segments 3 to 6 opaque, light gray pruinose in the middle, on the posterior margin and on the sides, the gray in the middle forming a triangle on each segment, and on the third usually expanded each side in the form of a small subdorsal triangle, the hairs of the gray portions light yellow; venter black, wholly light gray pruinose or brown pruinose in the middle, the sides broadly light gray pruinose. Legs black, the tibiae, except the apices, yellowish white. Halteres brown, the knobs yellow. Wings hyaline, the stigma yellowish, first posterior cell narrower or only slightly broader at the apex than at the base, anterior branch of the third vein not appendiculate. Length, 17 to 18 mm. Six specimens (No. 721).

Type.—No. 3974, U.S.N.M.

TABANUS TENEBROSUS, new species.

Female: Differs from *trigonus* as follows: Head above the antennae yellowish-gray pruinose, tooth of the third antennal joint very small, hairs of occiput, of under side of the head and on the pleura, white. Abdomen opaque, black, sometimes a reddish spot on sides of the second segment, wholly grayish pruinose, the median triangles, posterior and lateral margins of segments 2 to 6, a lighter gray than the remainder of the abdomen; the darker markings consist principally of pairs of spots bordering the median triangles; venter black, brownish-gray pruinose in the middle, the sides a lighter gray. Wings hyaline, stigma pale yellowish. Length, 18 to 20 mm. Four specimens (No. 721).

Type.—No. 3975, U.S.N.M.

TABANUS HUMILIS, new species.

Female: Differs from *trigonus* as follows: Head above the antennae yellow and highly polished, antennae wholly reddish-yellow, the tooth of the third joint very small, hairs of the palpi mixed white and black, those of the occiput, lower side of the head and on the pleura, white. Scutellum noticeably lighter gray than the mesonotum. Abdomen somewhat polished, black, marked with gray as in *trigonus*, the median triangles extremely small on the last two segments; venter black, light gray pruinose. Extreme apices of the middle and hind tibiae brownish-black. Wings hyaline, stigma yellow, base of anterior branch of the third vein not appendiculate, first posterior cell not narrowed at its apex. Length, 12 to 13 mm. Two specimens (No. 723).

Type.—No. 3976, U.S.N.M.

TABANUS PYRRHUS Walker.

Tabanus pyrrhus WALKER, Ins. Saund., Dipt., 1856, p. 47, pl. II, figs. 4, 5.

Four female specimens (No. 724). The species was originally described from East India.

Family ASILIDAE.

LEPTOGASTER BASILARIS, new species.

Male: Head black, whitish pruinose, the mystax and hairs of the occiput and cheeks also whitish; antennae yellowish-brown, the first two joints yellow, the third bare; proboscis black. Thorax black, the posterior angles yellow, the sides and pleura white pruinose, the hairs whitish, the bristles black; scutellum black, the margin bearing numerous white hairs. Abdomen black, sutures of segments 2 to 5 yellow, the first segment and sutures of the others light gray pruinose; hairs chiefly whitish. Front and middle femora and tibiae dark yellow, the apices brown, hind femora and tibiae brownish, the basal two-fifths white; tarsi brown, the first joint, except the apex, white. Halteres whitish, the knobs brown. Wings hyaline, a brown cloud in the subcostal cell immediately before the apex of the auxiliary vein. Length, 15 mm. A single specimen (No. 707).

Type.—No. 3977, U.S.N.M.

CYRTOPOGON PICTIPENNIS, new species.

Male and female: Black, the halteres, pulvilli, and base of tarsal claws yellow. Head, except the upper part of the occiput and the front in the female, light gray pruinose, face in profile evenly convex from antennae to oral margin, covered with mixed black and yellowish hairs, those of the palpi, antennae, front, and on the upper part of the occiput black, on the lower part of the occiput and on the cheeks principally whitish; third joint of the antennae narrow and nearly linear,

almost five times as long as the style. Thorax somewhat polished, a median line on the anterior third, the sides and a spot at each anterior angle, one behind each humeri and a third on the suture each side, gray pruinose; hairs and bristles of the metanotum black, those of the pleura mixed black and yellowish; scutellum convex, entirely covered with black hairs. Abdomen polished, the posterior margins of segments 2 to 4 in the male, 2 to 5 in the female, gray pruinose, hairs black, those on the sides of the first four segments in the male, on the sides and posterior margins of the first five segments in the female, yellowish. Hairs of legs black, except on the basal two thirds of the underside of the middle femora and on the basal two-thirds of the hind femora, where they are yellowish, those on the middle and hind tibiae of the female mixed yellow and black; inner side of the apical two-thirds of the front tibiae and the underside of the first joint of the front tarsi densely covered with short golden-yellow hairs. Wings hyaline, a black spot at the apex and a brown cloud covering the vein and crossvein at the apex of the second basal cell, and sometimes the crossvein at the apex of the discal cell; sometimes a brownish cloud covers the small crossvein; veins brown, the third before forking with the second yellow. Length, 10 to 16 mm. Five males and three females (No. 653).

Type.—No. 3978, U.S.N.M.

DASYPOGON JAPONICA Bigot.

Dasypogon japonica BIGOT, Ann. Soc. Ent. France, 1878, p. 411.

Three males and two females (No. 654). The species was originally described from Japan.

OMMATIUS PENNUS Walker.

Ommatius pennus WALKER, List Dipt. Ins. Brit. Mus., 1849, Pt. 2, p. 469.

Three males and four females (No. 655), agreeing fairly well with the description, which was founded on specimens from Corea and Borneo.

ASILUS FLAVICORNIS Ruthe.

Asilus flavicornis RUTHE, Isis, 1831, p. 1217.

Asilus olivieri MACQUART, Dipt. Exot., 1838, I, Pt. 2, p. 136 [252].

One male and six females (No. 661), agreeing well with the descriptions by the various European authors. The species has heretofore been reported from Europe, and belongs to the subgenus *Heligmoneura*. The synonymy given above was first published by Dr. Loew.¹

¹ Linn. Ent., 1849, p. 61.

ASILUS ALBICEPS Meigen.

Asilus albiceps MEIGEN, Sys. Besch. Eur. Zweif. Ins., 1820, II, p. 312 [235].

Asilus canescens WIEDEMANN, in Meigen's Sys. Besch. Eur. Zweif. Ins., 1820, II, p. 336 [254].

Asilus albibarbus ZELLER, Isis, 1840, p. 66.

Asilus nudus LOEW, Isis, 1840, p. 548.

One male and two females (No. 660), agreeing well with the descriptions. This species was also originally described from Europe. It belongs to the subgenus *Philonicus*. The synonymy is according to Dr. Loew.¹

ASILUS ATRIPES Loew.

Asilus atripes LOEW, Neue Beitr., 1851, II, p. 15.

One male and four females (No. 660), agreeing well with the description given by Dr. Schiner.² This species belongs to the subgenus *Tolmerus*, and was also originally described from Europe.

ASILUS ANGUSTICORNIS Loew.

Asilus angusticornis LOEW, Wien Ent. Monatsch., 1858, p. 106.

Four males and six females (No. 659), agreeing well with the description, which was founded on specimens from Japan. It belongs to the subgenus *Neoitamus*.

ASILUS VIRGATIPES, new species.

Male and female: Black, the halteres, under side of the femora, tibiae except the apices of the hind ones, and the tarsi except the last four joints of the hind ones and the apices of all of the claws, yellow. Head yellow pruinose, hairs of the mystax yellow, or mixed black and yellow, those of the antennae black, of the front and on the upper part of the occiput yellow or black, those on the lower part of the occiput, cheeks, palpi, and proboscis yellow. Antennal style over twice as long as the third joint, the latter broad lanceolate. Hairs of upper side of the thorax, except on the posterior angles, black, those in front of the suture short and sparse, behind it rather long and with two rows of bristly hairs, those of each end of the pleura yellow, while the hairs of the middle are yellow, or mixed black and yellow; scutellum covered with long black or yellow hairs and bearing six or eight marginal bristles. Hairs of the abdomen yellow, those on the posterior margin of the first segment, in the middle of segments 2 to 6 except the posterior margin of each, and on the remaining portion of the abdomen except at the tip of the hypopygium and of its anterior dorsal process, sometimes black; segments after the first destitute of a row of bristles in front of the posterior

¹ Linn. Ent., 1849, p. 145.

² Fauna Aust., Dipt., 1862, I, p. 155.

margin; hypopygium horizontal, as long as the third segment of the abdomen, before the middle of its upper side bearing a rather narrow, vertical process, while beyond the middle are two pairs of shorter processes, the anterior ones each bearing a short tooth near the middle of the front side, and above it is a deep concavity; the lower portion of the hypopygium consists of a broad hook, which does not reach the middle of the upper portion; in the female the sixth and following segments of the abdomen are compressed, apparently forming the base of the ovipositor, which is nearly as long as the four preceding segments and is destitute of a circle of spines at the tip. Hairs of the legs mixed yellow and black, front femora destitute of bristles, middle femora each bearing two near the apex, the hind ones bearing three near their apices and one or two near the middle of the front side; hind tibiae of the male each bearing a comb-like row of four bristles on the posterior side near the base, the three basal ones truncated and somewhat hooked at the tips; on the outer side of each hind tibiae are two bristles, one near the base and the other beyond the middle, in the female with six on the outer side and one or two on the posterior side; middle tibiae each bearing two bristles on the outer side; front tibiae each bearing a row of four bristles on the outer side and with two on the posterior side; front tarsi of male bearing several knobbed bristles. Wings hyaline, the portion in front of the fifth vein usually tinged with yellowish, the broad apex and posterior margin beyond the apex of the anal cell gray, the subcostal cell sometimes brown. Length, 23 to 27 mm. Four males and three females (No. 658). This species also belongs to the subgenus *Neotamnis*.

Type.—No. 3979, U.S.N.M.

ASILUS BREVISTYLUS, new species.

Male and female: Differs from the above description of *virgatipes* as follows: Femora wholly black; tarsi brown. Antennal style slightly shorter than the third antennal joint; the latter narrow, almost linear. The two rows of thoracic bristles behind the suture very stout. Scutellum covered with very short hairs, and bearing two or four marginal bristles. Abdomen, except the genitalia, opaque, gray pruinose; a row of yellow bristles in front of the posterior margin of segments 1 to 6; hypopygium destitute of the two pairs of processes beyond the middle of its upper side, the hook like lower portion reaching slightly beyond the middle of the upper part; eighth segment of the abdomen prolonged in a triangle at the apex of its under side; sixth and seventh segments in the female not forming part of the ovipositor, which is three-fourths as long as these two segments taken together. Front femora each bearing 4 or 5 stout bristles on the under side before the middle, and 1 to 3 on the posterior side beyond the middle; middle femora each bearing 8 to 10 in two rows on the under side, 2 on the front side at the first and second third of its length, and 1 to 3 on

the upper side near the tip; hind femora each bearing 6 bristles on the under side in two rows, 5 on the front side, 2 of which are in a transverse row near the tip, and 2 on the upper side before the tip; hind tibiae destitute of a comb-like row of bristles near the base, each bearing 2 bristles on its inner side beyond the middle, 2 on the posterior side before the middle, and 3 or 4 on the front side, the lowest of which is at the last third of the length of the tibia; middle and front tibiae bearing numerous irregularly arranged bristles; front tarsi destitute of knobbed bristles. Wings uniformly tinged with pale yellowish. Length, 21 to 26 mm. Two males and three females (No. 656). Belongs to the subgenus *Eutolmus*.

Type.—No. 3580, U.S.N.M.

ASILUS SCUTELLARIS, new species.

Male and female: Closely related to the preceding species (*brevistylus*), but differs as follows: Tibiae and tarsi black. Scutellum covered with long hairs and bearing 4 or 6 marginal bristles; bristles of abdomen mixed black and yellow; front femora destitute of stout bristles; a row of bristly hairs on the under side of each; middle femora with a few bristly hairs on the under side, 2 bristles on the front side, and 2 on the posterior side near the tip. Wings hyaline; middle of the marginal and first submarginal cells except their bases, also the broad apex and posterior margin of the wing beyond the middle of the axillary cell, dark gray. Length, 21 to 26 mm. Two males and one female (No. 656). Also belongs to subgenus *Eutolmus*.

Type.—No. 3981, U.S.N.M.

PROMACHUS ATER, new species.

Male and female: Black; the tibiae, except the ends, the halteres, and pulvilli, yellow. Hairs of the head light yellow, those of the antennae and of the front chiefly black, bristles of upper part of occiput black; antennal style over twice as long as the third joint, the latter broad lanceolate; face and occiput yellow pruinose, middle of upper half of the latter, and the front, gray pruinose. Hairs and bristles of thorax black, the hairs of the lateral and posterior margins largely yellow, those of the pleura pale yellow; scutellum covered with rather long yellow hairs, and bearing numerous yellow bristles. Abdomen velvety, the first segment and posterior and lateral margins of segments 2 to 6 in the male, also the posterior angles of the seventh in the female, gray pruinose; the eighth segment in the male, the seventh and eighth, except the posterior margin of the seventh, in the female, polished, steel-blue; hairs of abdomen pale yellow, many in the middle of the dorsum of segments 3 to 5 in the male, 3 to 6 in the female, and all those on 6 to 8 both dorsally and ventrally in the male, on 7 and 8 except the posterior angles of the seventh in the female, black; hypopygium of male densely covered above with long white

hairs, the under side with short black ones. Hairs of legs mixed yellow and black, those of the front and middle coxae white, the bristles chiefly black. Wings hyaline, veins brown. Length, 23 to 27 mm. Four males and four females (No. 657).

Type.—No. 3982, U.S.N.M.

LAPHRIA MITSUKURII, new species.

Male and female: Black; the pulvilli, and stems of the halteres largely yellow, bases of tarsal claws reddish. Hairs of mystax light yellow mixed with a few black ones, those of the antennae mixed reddish and black, of the front and upper part of the occiput black, on the lower part of the occiput, of the cheeks and on the proboscis, reddish yellow mixed with black, on the palpi black. Thorax polished, the hairs rather short and sparse, black, on the front end and sides mixed with reddish-yellow ones, those on the pleura chiefly black; scutellum covered with rather short black hairs, and with numerous black and yellow bristly hairs along the margin. Abdomen polished, the first three segments and base of the fourth sparsely covered with rather short black hairs; remainder of abdomen densely covered with appressed bright red hairs, those of the venter mixed black and yellow. Hairs of the legs mixed black and reddish-yellow. Wings hyaline, the veins usually bordered with brown. Length, 19 to 25 mm. Five males and three females (No. 652).

Type.—No. 3983, U.S.N.M.

This fine species is respectfully dedicated to Professor Mitsukuri, to whom this Museum is largely indebted for the very valuable series of insects of which the above specimens form a small part.

LAPHRIA DISPAR, new species.

Male and female: Black; the halteres and pulvilli yellow, base of tarsal claws reddish. Mystax black, the face above it rather densely covered with depressed silvery white hairs; hairs and bristles of the antennae, front and upper part of the occiput, chiefly black; hairs of lower part of occiput, cheeks, and proboscis, in the male white, in the female chiefly black, those of the palpi black. Thorax slightly polished, in the male covered with depressed whitish hairs interspersed with longer, suberect, black ones, in the female with wholly black ones; hairs of pleura white; the fan-like row of bristly hairs in front of the halteres in the male is black above, but changing to white below, in the female wholly black; scutellum in the male covered with depressed white hairs and bearing 10 to 12 marginal yellow bristles, in the female the hairs and bristles are black. Abdomen somewhat polished, tinged with purple; in the male the first four segments covered with depressed white hairs, the remainder with sparser black and white ones, in the female the entire abdomen except the base of the first segment sparsely covered with short, depressed, black hairs. Hairs of legs mixed black and

white, front tibiae on the inner side and front tarsi on the under side covered with very short golden-yellow hairs. Wings gray, darkest toward the apices, the base partly hyaline. Length, 15 to 19 mm. Two males and three females (No. 650).

Type.—No. 3984, U.S.N.M.

Family THEREVIDAE.

PSILOCEPHALA ALBATA, new species.

Male: Black, the apices of the femora, the tibiae except the apices, the first joint of the front tarsi and the first two joints of the others except the apex of each, yellow; hypopygium, except at base, yellowish; halteres brown, the stems largely yellow. Front and face whitish pruinose, a brown streak extends from the antennae to each eye, hairs of the front white, those of the antennae, vertex and upper part of the occiput, black, on the lower part of the occiput, cheeks and mouth parts, white; first antennal joint gray pruinose, as long as the two following joints taken together, the third lanceolate, slightly more than twice as long as wide, the style less than one-fourth as long as the third joint. Thorax gray pruinose, marked with 4 brown vittae, hairs of the center of the dorsum black, those of the margins, pleura and scutellum, white. Abdomen densely white pruinose, its hairs also white; hypopygium opaque, thinly gray pruinose. Hairs of the femora white, the bristles and those of the tibiae black. Wings hyaline, stigma yellowish-brown, fourth posterior cell open.

Female: Differs from the male as follows: Middle and hind femora, yellow. Front, yellowish gray pruinose, the lower portion gray pruinose, two brown spots just below the middle, contiguous to the eyes; hairs of the front black. Abdomen opaque, brown pruinose, the first segment and posterior and lateral margins of the others, gray pruinose, most extended on the posterior part of the abdomen; genitalia polished, black. Length, 9 to 13 mm. Four males and two females (No. 694).

Type.—No. 3985, U.S.N.M.

Family BOMBYLIIDAE.

HYPERALONIA TANTALUS Fabricius.

Anthrax tantalus FABRICIUS, Ent. Sys., 1791, IV, p. 260.

Seven specimens (No. 644). This species has heretofore been reported from Tranquebar, Hindoostan; Java; Celebes; Borneo; Sula; and Shanghai, China.

HYPERALONIA FLAVOFASCIATA Macquart.

Exoprosopa flavofasciata MACQUART, Dipt. Exot., 1855, Supp. V, p. 90.

Six specimens (No. 642). Macquart's specimens were from north China.

HYPERALONIA SIMILIS, new species.

Black, the apex of the scutellum brownish-black. Hairs of front, antennae and face black, lower part of front and whole of face sparsely covered with depressed yellow scales, third joint of antennae elongate-conical on the basal half, the remainder nearly linear, style two-thirds as long at the third joint; proboscis not projecting beyond the oral margin. Thorax opaque, the middle of the dorsum covered with depressed black scales which in some lights have a pearly reflection, intermixed with a few black hairs, in front of the scutellum, on the posterior angles, sides, front end and pleura with golden-yellow hairs; scutellum covered with black scales mixed with a few black hairs, the margin bearing black bristles and a few golden-yellow hairs. Abdomen on the sides bearing a fringe of hairs which on the first segment and anterior angles of the second is chiefly golden-yellow, on the third partly white, the remainder black; dorsum of abdomen densely covered with depressed black scales, except a crossband of golden-yellow ones occupying the whole of the third segment and the posterior half of the second, on the latter broadly interrupted, on the third subinterrupted, with black scales in the middle, the seventh segment bearing an interrupted crossband of depressed white scales. Wings dark brown, with a purplish reflection, the apex from the tip of the first vein to that of the fifth, grayish hyaline. Hairs and bristles of legs chiefly black. Length, 13 mm. Two specimens (No. 613).

Type.—No. 3986, U.S.N.M.

SPOGOSTYLUM DISTIGMA Wiedemann.

Anthrax distigma WIEDEMANN, *Aus. Zweif. Ins.*, 1828, I, p. 309.

Two specimens (No. 619). This species was originally described from Java, and has been reported from Nankauri, one of the Nicobar Islands; from north Bengal, Hindoostan; Borneo, Sumatra, Celebes, Philippine Islands, and several other islands of Malaysia.

ANTHRAX LIMBATA, new species.

Black, the halteres yellow. Hairs of front black, the scales sparse, depressed, pale yellow, scales of the face and cheeks dense and white, hairs of antennae mixed black and yellowish; third joint of antennae conical on its basal fourth, the remainder nearly linear; proboscis not projecting beyond the oral margin. Thorax covered with depressed black scales, those in front of the scutellum yellow, hairs of the sides, front end and pleura also yellow; scutellum covered on the upper side with depressed black scales, the margin with yellow scales and black bristles. Abdomen on the first segment, base of the second and sides of the first four covered with rather long yellow hairs, sides of the fifth and sixth with black ones; dorsum covered with depressed black

scales, the anterior angles of the second segment, a crossband on the bases of the third and fourth, and on the apices of the fifth and sixth segments, covered with yellow scales. Wings hyaline, costal and subcostal cells brown, first basal cell largely smoky, the scales and bristles along the front edges of the wings black. Claws of front tarsi very small. Length, 13 mm. A single specimen (No. 645).

Type.—No. 3987, U.S.N.M.

BOMBYLIUS MAJOR Linnaeus.

Bombylius major LINNAEUS, Fauna Suec., 1761, p. 1918.

One male and six females (No. 646) agreeing in all respects with specimens from Europe and the United States.

BOMBYLIUS ATRICEPS Loew.

Bombylius atriceps LOEW, Berl. Ent. Zeitsch., 1863, p. 301.

Three males and four females (No. 647) agreeing with specimens from the United States.

ANASTOECHUS NITIDULUS Fabricius.

Bombylius nitidulus FABRICIUS, Entom. Sys., 1794, IV, p. 409.

Bombylius diadema MEIGEN, Klass. Besch. Eur. Zweif. Ins., 1801, p. 182.

Bombylius caudatus MEIGEN, Klass. Besch. Eur. Zweif. Ins., p. 181.

Anastoechus barbatus OSTEN SACKEN, Bull. U. S. Geol. Sur., April 30, 1877, III, No. 2, p. 252.

Two males and six females (No. 648) agreeing in all respects with specimens from Europe and the United States.

Family DOLICHOPODIDAE.

RHAPHIUM DISPAR, new species.

Male: Head green, the face densely, the front thinly, white pruinose, bristles of vertex and upper part of the occiput black, hairs of lower part of occiput yellowish-white; antennae black, the third joint elongate oval, twice as long as broad, the terminal style longer than the remainder of the antennae. Thorax bluish-green, thinly white pruinose, the hairs and bristles black, hairs of sides of prothorax and of the front calypteres whitish; scutellum green. Abdomen green, the suture of the first and second segments black, segments three to six and the posterior half of the second densely whitish pruinose, in certain lights concealing the ground color; hairs on sides of first three segments light yellow, other hairs and bristles black; hypopygium projecting less than the length of the sixth abdominal segment beyond the latter, the two filiform processes yellow, projecting forward on the under side of the body and reaching the posterior portion of the third ventral segment. Legs yellow, coxae blackish-brown, white pruinose,

front femora largely, apices of the posterior ones, and the hind tarsi, brown; first joint of front tarsi bearing a fringe of very short black bristles on the upper side, extending from near the base to beyond the middle, second joint noticeably dilated. Wings hyaline, last section of fourth vein gently sinuate, apex of first posterior cell slightly wider than half the length of the hind crossvein. Halteres yellow.

Female: Same as the male with these exceptions: Third joint of antennae oval, only slightly longer than broad. Abdomen not white pruinose, genitalia concealed. Front coxae and front femora wholly yellow; front tarsi destitute of a fringe of black bristles, none of the joints dilated.

Length, 4 to 5 mm. One specimen of each sex (No. 747).

Type.—No. 3988, U.S.N.M.

DOLICHOPUS NITIDUS Fallen.

Dolichopus nitidus FALLÉN, Dipt. Suec., Dolich., 1823, p. 12.

Two female specimens (No. 747) agreeing well with the descriptions of this European species, but the absence of a male specimen throws a certain degree of doubt upon the correctness of this identification.

Family SYRPHIDÆ.

MICRODON AURICOMUS, new species.

Male and female: Head greenish-blue, its hairs yellowish-white, those of the front black; antennae brownish-black, apex of second joint and the arista brownish-yellow, the first joint as long as the second and third taken together. Body very robust, green, middle of mesonotum sometimes marked with three purple vittae, each bordered with brassy; hairs of body yellow, usually a few in center of mesonotum, and on the bases of the second and third abdominal segments, black. Legs brownish-black, hairs of femora, of inner side of tibiae, and of the tarsi, chiefly black, those on remainder of tibiae, yellow. Wings hyaline, veins beyond base of discal cell sometimes bordered with brown. Halteres yellow.

Length, 12 to 16 mm. Two males and one female (No. 708).

Type.—No. 3989, U.S.N.M.

PARAGUS FASCIATUS, new species.

Male: Head black, the frontal triangle and the face light yellow, vertical triangle polished, the portion in front of the lowest ocellus opaque, yellowish-gray pruinose; antennae brownish-black, the arista and lower portion of the third joint except at its apex broadly brownish-yellow, the third joint sublanceolate, nearly twice as long as the first two taken together. Thorax polished, greenish-black, its hairs yellow, two gray pruinose vittae on its anterior end; middle of pleura

densely covered with appressed white hairs; scutellum greenish-black, its apex broadly light yellow. Abdomen on the first segment black, in the middle marked with a light yellow fascia widely separated from the lateral margin; remainder of abdomen yellow, a black fascia on the second segment behind the middle, extending to the posterior angles but not reaching the lateral margins; middle and posterior margins of the third segment and the whole of the fourth brownish-yellow. Legs yellow, middle of the posterior femora and tibiae, black. Wings hyaline, the stigma pale gray. Halteres yellow.

Female: Differs from the male as follows: Front polished, greenish-black, the sides opaque, gray pruinose, a black vitta in middle of face (antennae wanting in the single specimen under examination). Abdomen with a black fascia on the posterior margin of the third segment, produced forward in the middle where it crosses the segment, that on the second segment occupying more than its posterior half. Hind legs destitute of black bands.

Length, 6 mm. One specimen of each sex (No. 725).

Type.—No. 3990, U.S.N.M.

MELANOSTOMA MELLINA Linnaeus.

Musca mellina LINNAEUS, Fauna Suec., 1761, p. 1821.

Six males and seven females (No. 678) agreeing in all respects with specimens from the United States.

SYRPHUS SERARIUS Wiedemann.

Syrphus serarius WIEDEMANN, Aus. Zweif. Ins., 1830, I, p. 128.

Three males and two females (No. 672) agreeing well with the description, which was founded on specimens from China.

SYRPHUS RIBESII Linnaeus.

Musca ribesii LINNAEUS, Fauna Suec., 1761, p. 1816.

Two males (No. 674) agreeing in all respects with specimens from the United States.

SYRPHUS ARCUATUS Fallen.

Seacra arcuata FALLEN, Dipt. Suec., 1816, p. 42.

Seven males (No. 674) agreeing in all respects with specimens from the United States. It has previously been reported from Japan by Motschulsky.¹

SYRPHUS COROLLAE Fabricius.

Syrphus corollae FABRICIUS Ent. Syst., 1794, IV, p. 306.

A female specimen (No. 674) which agrees very well with specimens from Europe.

¹ Bull. Soc. Imp. Nat. Moscou, 1866, Pt. 1, p. 183.

SYRPHUS BALTEATUS De Geer.

Musca balteata DE GEER, Mém. Serv. Hist. Ins., 1776, VI, p. 116.

Musca alternata SCHRANK, Enum. Ins. Aust. Indig., 1781, p. 448.

Scæva nectaræa FABRICIUS, Mant. Ins., 1787, II, p. 331.

Syrphus nectarinus WIEDEMANN, Aus. Zweif. Ins., 1830, II, p. 128.

Five males and five females (No. 675), which are indistinguishable from European specimens in the U. S. National Museum. Of the synonymy given above the first two were first published by Meigen, the third is by the writer. Wiedemann's specimens were collected in China.

SYRPHUS LATUS, new species.

Female: Occiput and upper part of the front black, the lower part of the front, antennae, face, and cheeks yellow; front projecting forward as far as the facial tubercle, except on the vertex densely yellowish-gray pruinose, its short hairs and those of the antennae black, remaining hairs of the head pale yellow; eyes densely hairy, proboscis brown, very robust; third joint of antennae oval, viewed from the inner side slightly longer than the first two taken together, the latter subequal in length; arista bare. Thorax olive-green, somewhat polished, marked with three black vittae, the sides and scutellum yellow; hairs of thorax and of base of scutellum pale yellow, those at apex of scutellum black. Abdomen subopaque, black, the first segment, anterior two-thirds of the second except on the posterior two-thirds of the lateral margins, also an arcuate fascia in front of the middle of the third, fourth, and fifth segments, yellow, the lateral margins of the abdomen black or brown; hind margins of the second and following segments yellowish-brown, of the fifth yellow; second segment marked in front of the middle with two arcuate lines which unite in the middle of the dorsum and are prolonged to the black on the posterior margin; hairs of abdomen concolorous with the ground color. Legs yellow, hind tarsi largely brown. Wings hyaline, strongly tinged with yellow, most distinct in the costal cell; stigma pale yellow. Halteres, yellow. Length, 16 mm. Two females (No. 680). A broad, robust species resembling *Didea fasciata*.

Type.—No. 3991, U.S.N.M.

SYRPHUS PORCINUS, new species.

Male and female: Of the same form as *latus*, but differing as follows: Front wholly black, on its lower end marked with a polished black spot; facial tubercle projecting much farther forward than the front, hairs of face chiefly black, eyes bare, proboscis slender, third joint of antennae slightly shorter than the first two, its upper edge and the arista brown. Thorax not marked with black vittae. Abdomen of male somewhat polished, yellow, a median vitta and the middle of the hind margin of the first two segments, also the hind margins of the

third and fourth, black; hairs of abdomen beyond the black hind margin of the second segment chiefly black (abdomen of female wanting in the single specimen under examination). Tarsi brown at the apices. Length, 16 mm. A specimen of each sex (No. 679).

Type.—No. 3992, U.S.N.M.

SYRPHUS LAUTUS, new species.

Male and female: Head black, the front, except the vertex, also the antennae, face, and cheeks, yellow; in the female the middle of the front is brown, prolonged as a narrow line to the insertion of the antennae; hairs of front, antennae, and upper part of the face black, those on remainder of face, cheeks, and occiput yellow; eyes densely hairy. Thorax greenish-black, marked with three velvet black vittae, the spaces between them anteriorly gray pruinose, the lateral margins and a spot on the pleura in front of the wings yellowish-gray pruinose; hairs of thorax mixed black and yellow, those at the humeral angles chiefly yellow; scutellum polished, bluish, its hairs black. Abdomen opaque, velvet-black, the first segment and both ends of the second polished bluish, third and fourth segments each marked on the anterior portion with an arcuate yellow fascia, the posterior portion of the fourth segment and the whole of the fifth polished yellow; hairs of the first three segments and base and sides of the fourth black, hairs of remainder of abdomen yellow. Legs yellow, the coxae and bases of the femora black. Wings strongly tinged with yellow, calypteres blackish. Halteres yellow. Length, 17 mm. Two males and two females (No. 669).

Type.—No. 3993, U.S.N.M.

DIDEA FASCIATA Macquart.

Didea fasciata MACQUART, Hist. Nat. Ins., Dipt., 1834, I, p. 508.

Eutica foersteri MEIGEN, Syst. Besch. Eur. Zweif. Ins., 1838, VII, p. 110.

A specimen of each sex (No. 681), agreeing well with the descriptions of this European species. The synonymy has already been published by Dr. Schiner.¹

SPHAEROPHORIA CYLINDRICA Say.

Syrphus cylindricus SAY, Amer. Ent., 1824, I, p. 22.

Sphaerophoria contigua MACQUART, Dipt. Exot., 1846, Supp. II, p. 62.

Eleven males and four females (No. 677), agreeing in all respects with specimens from the United States. The synonymy is by Osten Sacken.²

SPHAEROPHORIA TAENIATA Meigen.

Syrphus taeniatulus MEIGEN, Syst. Besch. Eur. Zweif. Ins., 1822, III, p. 325.

Seven males and five females (No. 676), agreeing well with the descriptions of this European species. It has already been reported from Japan by Motschulsky.³

¹ Fauna Aus., Dipt., 1862, I, p. 314.

² Catal. Dipt. N. Am., 1878, p. 126.

³ Bull. Soc. Imp. Nat. Moscon. 1866, Pt. 1, p. 183: *Melithriptus*.

BACCHA MACULATA Walker.

Baccha maculata WALKER, Ins. Saund., Dipt., 1856, p. 223.

Six males and three females (No. 706), agreeing with the description, founded on a specimen from the East Indies.

VOLUCELLA JAPONICA Bigot.

Volucella japonica BIGOT, Ann. Soc. Ent. France, 1875, p. 473.

Three specimens (No. 668). The original specimens also came from Japan.

VOLUCELLA NIGRICANS, new species.

Male and female: Head black, the lower part of the front, antennae, and face, yellow, polished, except the upper margin of the face, which is yellowish pruinose; hairs of occiput and underside of the head mixed yellow and black, those of the face yellow, of the front black, except those of the anterior portion in the female, which are yellow; eyes of male hairy, those of the female bare. Thorax polished, black, the humeral angles reddish-yellow, gray pruinose; hairs of thorax black; scutellum polished, black, its hairs and the marginal bristles also black. Abdomen black, somewhat scabrous, the first and fourth segments in the male, the first and fifth in the female, highly polished, the base of the second sometimes polished; hairs concolorous with the abdomen. Legs black, the hairs also black, the pulvilli yellow. Wings hyaline, the base to the proximal end of the discal cell, and extending from the costa to the last vein, yellow, beyond this a broad, irregular brown fascia extending nearly across the wing, veins beyond this, except the proximal portion of the first three, bordered with brown, a yellow costal spot beyond the brown fascia, and between this spot and the tip of the wing the brown border to the veins is enlarged and forms a large brown spot; front calypteres yellowish, the hind ones brown, all of them fringed with golden-yellow hairs. Halteres brown, the knobs light yellow. Length, 18 to 22 mm. Seven males and three females (No. 667). A broad, robust species, belonging to the same group as the preceding.

Type.—No. 3994, U.S.N.M.

MEGASPIS ZONALIS Fabricius.

Syrphus zonalis FABRICIUS, Ent. Syst., 1794, IV, p. 294.

Three males and five females (No. 665). The species has heretofore been reported only from China.

MEGASPIS CINGULATUS Vollenhoven.

Megaspis cingulatus VOLLENHOVEN, Versl. Med. Kon. Akad. Wet. Afd. Natwuk., 1863, XV.

Four males and four females (No. 666). The description was founded on specimens collected in Japan.

ERISTALIS TENAX Linnaeus.

Musca tenax LINNAEUS, Fauna Suec., 1761, p. 1799.

Five males and three females (No. 664). A European species which also occurs in the United States. It was previously recorded from Japan by Dr. Loew.¹

ERISTALIS INCISURALIS Loew.

Eristalis incisuralis LOEW, Wiener Ent. Monatsch., 1858, p. 108.

Four males and three females (No. 662). The species was originally described from Japan.

ERISTALIS OCULARIUS, new species.

Male and female: Head black, the vertex, a large space at base of antennae, and the facial tubercle highly polished, face elsewhere opaque, yellowish-gray pruinose, the cheeks thinly gray pruinose; in the male, an opaque brownish pruinose spot below the lowest ocellus, and the lower triangle opaque, yellowish-gray pruinose next the eyes; in the female, an opaque, velvet-black fascia near the middle, bordered below with a yellowish-gray pruinose spot which extends along the eyes to the face; hairs of front and of upper part of occiput black, remaining hairs of occiput, of face and cheeks, whitish; antennae brown, the under margin of the third joint yellow, the arista very short pubescent; eyes yellowish, thickly marked with purple dots and larger spots, and thinly covered with hairs. Thorax polished black, the lateral margins and pleura opaque, gray pruinose, mesonotum of female marked with five gray pruinose vittae; the sparse hairs of mesonotum chiefly yellow, those of the pleura whitish; scutellum polished black, its hairs mixed black and yellow. Abdomen of male opaque, velvet-black, the sides and posterior margin of the first segment, a lateral spot and the middle of the posterior margin of each of the three following, polished, leaden-gray, most extended on the fourth; abdomen of female similar except that the lateral spots are gray pruinose, those on the third and fourth segments united, forming a crossband which is emarginate in the middle of its posterior side, fifth segment wholly polished; hairs of abdomen short and sparse, those of middle of dorsum mixed black and yellow, the others chiefly yellow. Legs black, extreme apices of femora, basal third of the tibiae, first two joints of the front and middle tarsi, and the first joint of the hind ones, yellow. Wings hyaline, stigma yellowish, a small black spot at its base. Halteres yellow. Length, 11 to 13 mm. Three males and seven females (No. 670).

Type.—No. 3995, U.S.N.M.

¹ Wiener Ent. Monatsch., 1858, p. 108.

ERISTALIS VIRIDIS, new species.

Male and female: Head polished green, the sides of the front, the entire face except the tubercle, also the occiput and cheeks next the eyes, opaque, whitish pruinose; hairs of the head yellow or whitish, those of the vertex chiefly black; antennae yellow, the arista bare; eyes bare, not distinctly spotted. Thorax polished green, marked with four velvet-black vittae, the outer ones interrupted at the suture; posterior margin of thorax also velvet-black, pleura thinly gray pruinose; hairs of thorax short and rather sparse, yellow; scutellum polished green, its base opaque, velvet-black, the hairs yellow. Abdomen polished green, second segment marked with an H-shaped velvet-black spot placed transversely; the third with a velvet-black fascia behind the middle, emarginate in the middle of its posterior side and prolonged anteriorly in the middle to the front end of this segment; fourth segment with a velvet-black dot in front of its center; hairs of abdomen rather sparse and short, yellow. Legs black, apices of femora and broad bases of tibiae, yellow, first joint of front and middle tarsi reddish brown. Wings hyaline, stigma gray, a small spot at its base, yellow. Halteres yellow. Length, 9 to 12 mm. A specimen of each sex (No. 671).

Type.—No. 3996, U.S.N.M.

HELOPHILUS VIRGATUS, new species.

Male and female: Head polished black, the vertex opaque, brown pruinose, the occiput, sides of the face and in the male the entire front except a triangular spot above the antennae, in the female only its sides, opaque, yellowish-gray pruinose; hairs of the head yellow, in the male those of the vertex, in the female those of the entire front, black; antennae brown, partly or largely yellow, the arista yellow, bare; eyes bare. Thorax opaque, velvet-black, two vittae and the lateral margins yellow pruinose, pleura thinly gray pruinose, hairs of thorax short but rather dense, yellow; scutellum polished yellow, its hairs also yellow. Abdomen black, the sides of the first segment and a spot on each side of the second, usually yellow; the first segment and a fascia in front of the middle of the others, gray pruinose, that on the fifth segment in the female interrupted in the middle, bordered in front and behind with velvet-black, the posterior and lateral margins of each of these segments polished bluish-black; hairs short, sparse, black and yellow. Legs black, apices of the front and middle femora, basal two-thirds of the front tibiae, the entire middle tibiae and the first two joints of their tarsi, yellow; posterior femora greatly thickened, their tibiae strongly arcuate. Wings hyaline, the stigma brown. Halteres yellow. Length, 14 to 17 mm. Four males and five females (No. 663).

Type.—No. 3997, U.S.N.M.

XYLOTA LONGA, new species.

Male: Head polished, black, the lower angles of the front, the face, and the sides of the occiput next the eyes gray pruinose; antennae black, the arista reddish-brown. Thorax and scutellum polished, black, a gray pruinose spot at inner side of each humerus, hairs chiefly black. Abdomen narrower than the thorax, polished, black, a triangular opaque black spot on the second and third segments extending the entire length of each in the middle of the dorsum; hairs chiefly yellow. Legs black, hind femora greatly thickened, bearing many short spines on the apical portion of its under side, coxae not spined, hind tibiae strongly arcuate, prolonged into a large tooth at the apex of the inner side. Wings hyaline, the apex beyond the base of the submarginal cell strongly tinged with brown, apex of subcostal cell dark brown. Halteres yellow, the bases of the stems brown. Length, 18 mm. Three specimens (No. 688).

Type.—No. 3998, U.S.N.M.

XYLOTA CUPRINA, new species.

Male: Head black, vertical triangle polished, steel-blue, the face, lower angles of the front, and the occiput gray pruinose; antennae black, the third joint and the arista yellowish brown. Thorax and scutellum green, with a strong coppery tinge, a gray pruinose spot at the inner side of each humerus, middle of pleura gray pruinose, hairs of thorax chiefly yellow. Abdomen opaque, black, the first segment, sides of the next two, and the whole of the fourth, except a spot in the middle at the base, polished, bronze-green. Legs black, the apices of the front and middle femora, broad bases of the tibiae, apices of the front and middle tibiae, and the front and middle tarsi, except the last two joints, yellow. Wings hyaline, apex of the subcostal cell yellow. Halteres yellow. Length, 10 mm. Two specimens (No. 689).

Type.—No. 3999, U.S.N.M.

CHRYSOCHLAMYS CUPREA Scopoli.

Conops cuprea SCOPOLI, Entom. Carn., 1763, p. 355.

A male specimen (No. 682) agreeing well with Schiner's description of this European species.

CHRYSOCHLAMYS NIGRIFRONS Egger.

Chrysochlamys nigrifrons EGGER, Verh. Zool. Botan. Gesell., 1860, p. 661.

A male specimen (No. 682) which agrees well with the descriptions. This species was also originally described from Europe.

SPILOMYIA SALTUUM Fabricius.

Syrphus saltuum FABRICIUS, Ent. Syst., 1791, IV, p. 287.

A female specimen (No. 710) agreeing very well with Schiner's description. Also a European species.

MILESIA UNDULATA Vollenhoven.

Milesia undulata VOLLENHOVEN, Versl. Med. Kon. Akad. Wet. Afd. Natuurk., 1863, XV, p. 12.

Five males and four females (No. 685). This species was originally described from Japan.

Family CONOPIDAE.

CONOPS NIPONENSIS Vollenhoven.

Conops niponensis VOLLENHOVEN, Versl. Med. Kon. Akad. Wet. Afd. Natuurk., 1863, XV, p. 10.

Two male specimens (No. 715). Originally described from Japan.

CONOPS CURTULUS, new species.

Male: Occiput black, nearly the lower half and the upper portion in the middle yellow, narrowly gray pruinose next the eyes below the emarginations in the latter; vertex yellow, remainder of front yellowish brown, sometimes a brown spot in the center and another at base of antennae; face and cheeks yellow, opaque, yellow pruinose except on the antennal process, sides of face and fore part of cheeks with several brown punctures; antennae black, the third joint reddish brown, first joint slightly more than one-half as long as the second, slightly shorter than the third, first two joints of the style subequal in length, the first slightly broader than long, the second nearly twice as wide as the first and nearly twice as wide as long, the third lanceolate, almost three times as long as the first two taken together; proboscis black, below the middle yellowish, about one and one-half times as long as height of head. Thorax brownish black, the humeri yellow, the pleura and metanotum thinly gray pruinose; scutellum brownish black, the margin usually narrowly yellowish. Abdomen black, the posterior margin of each segment except the first yellowish, the posterior half of the sixth and nearly all of the portion beyond it yellow; first segment, a fascia on the posterior margin of the second to fourth, and the remainder of the abdomen beyond the latter gray pruinose; second segment only slightly longer than wide, not longer than the third. Wings grayish hyaline, the portion in front of the third vein and a border to the fifth, pale yellowish brown, the outline of this color indistinct; first vein from its base to the humeral crossvein brown, veins elsewhere yellow, changing into brown at their apices. Halteres yellow. Legs blackish, femora

brown, their broad apices and the whole of the tibiae reddish yellow, pulvilli and claws yellow, apices of the latter black. Length, 10 to 11 mm. Two specimens (No. 714).

Type.—No. 4000, U.S.N.M.

CONOPS OPIMUS, new species.

Male: Differs from the above description of *curtulus* only as follows: Occiput black, except the middle of the upper portion, the gray pruinosity extending across it above the center; face and cheeks destitute of brown punctures; antennae reddish brown, the first joint yellow, second joint of the style only slightly wider than the first; proboscis wholly black. Posterior angles of the thorax and the scutellum, except its extreme base, yellow. Broad apices of wings pale yellowish brown. Length, 12 mm. A single specimen (No. 713).

Type.—No. 4001, U.S.N.M.

PHYSOCEPHALA RUFIPES Fabricius.

Conops rufipes FABRICIUS, Species Insect., 1781, II, p. 166.

A male specimen (No. 712) agreeing well with specimens from Europe.

MYOPA BUCCATA Linnaeus.

Conops buccata LINNAEUS, Fauna Suec., 1761, p. 1006.

A male specimen (No. 711) agreeing with European specimens.

MYOPA TESTACEA Linnaeus.

Conops testacea LINNAEUS, System. Nat., 1766, XII, p. 1006.

A male specimen (No. 711) agreeing well with European specimens in the U. S. National Museum.

Family TACHINIDAE.

SERVILLIA JAKOVLEWII Portchinsky.

Echinomyia jakovlewii PORTCHINSKY, Horae Soc. Ent. Ross., 1882, p. 7.

Two male specimens (No. 735). This species was originally described from eastern Siberia.

SERVILLIA LUTEOLA, new species.

Female: Head opaque, densely yellowish pruinose except the frontal vitta; ocellar bristles stout, directed forward, two pairs of orbital bristles, frontal bristles in single rows, extending to basal fourth of the second antennal joint, bristly hairs of front black, the finer hairs and those of the face, cheeks, and occiput pale yellow; antennae reaching slightly below lowest third of the face, yellow, the third joint black, three-fourths as long as the second, widening to the tip, which is sub-

truncated; arista black, thickened on its basal two-thirds, the first joint almost as long as broad, the second three times as long as broad; palpi slender, linear, yellow, proboscis black. Thorax black, opaque, densely brownish-yellow pruinose, marked with four indistinct black vittae, thickly covered with short, pale yellow hairs, four pairs of postsutural dorso-central macrochaetae and three sternopleural ones; scutellum yellow, opaque, brownish-yellow pruinose, covered with short, yellow hairs and, except at the base, with black macrochaeta, the margin bearing three pairs of longer ones. Abdomen yellow, subopaque, brownish-yellow pruinose, thickly covered with short, pale yellow hairs, the first segment, except the posterior angles, and the middle of the second black, the hairs on the black portions, and for a short distance outside of them, also black; first segment bearing six marginal macrochaetae near the middle of the dorsum, the second and third each with a marginal row, the fourth with a discal and a marginal row. Femora black, apices, tibiae, and bases of tarsi yellow, apices of tarsi brown, tarsi not dilated. Wings grayish-hyaline, the costal margin and border to the veins pale yellowish, the third vein bearing five bristles near its base, elsewhere the veins are bare. Calypteres yellowish-white.

Length, 20 mm. A single specimen (No. 736).

Type.—No. 4002, U.S.N.M.

SERVILLIA POLITULA, new species.

Male: Head black, opaque, sides of front brownish pruinose, no orbital bristles, frontals in two irregular rows, extending to base of second antennal joint, ocellar bristles slender, hairs of front, sides of face, upper part of cheeks, and on the occiput next the eyes chiefly black; face, cheeks, and occiput yellowish-gray pruinose; antennae reaching slightly below lowest fourth of the face, black, the third joint almost as long as the second, widening toward the tip, which is broadly rounded; arista thickened on the basal two-thirds, the first joint noticeably longer than broad, the second nearly three times as long as wide; palpi slender, linear, yellow, the proboscis black. Thorax black, slightly polished, very thinly gray pruinose, thickly covered with rather long black hairs, on the lower part of the pleura with pale yellow ones; four pairs of postsutural dorso-central macrochaetae and three sternopleural ones; scutellum polished, brown, thickly covered with rather long black hairs, which on the posterior portion are intermixed with macrochaetae, the margin bearing four pairs. Abdomen highly polished, reddish yellow, the first segment, except its posterior angles, a broad dorsal vitta on the second and third, and the whole of the fourth, black; hairs of abdomen rather dense, becoming longer toward the apex, those on the first two segments black, on the posterior angles of the second and on the third and fourth bright yellow, intermixed with several black ones at the apex of the fourth, those of the venter chiefly black; first segment bearing eight marginal macrochaetae near

the middle of the dorsum, the second and third each with a marginal row, the fourth bearing scattered ones on its posterior half. Femora black, the apices, tibiae, and tarsi yellowish, front pulvilli almost as long as the last tarsal joint. Wings hyaline, the veins as far as the small crossvein, with the exception of the penultimate section of the fifth, bordered with pale yellowish, third vein bearing four bristles near its base, veins elsewhere bare. Calypteres gray.

Length, 18 mm. A single specimen (No. 738).

Type.—No. 4003, U.S.N.M.

ECHINOMYIA MICADO Kirby.

Echinomyia micado KIRBY, Ann. Mag. Nat. Hist., 1881, p. 457.

Eleven specimens (No. 737). This species was originally described from Kobe, Japan.

MERIANIA PUPARUM Fabricius.

Musca puparum FABRICIUS, Entom. Syst., 1794, IV, p. 326.

Four male specimens (No. 744), agreeing well with European specimens in the U. S. National Museum.

STURMIA ATROPIVORA Desvoidy.

Sturmia atropivora DESVOIDY, Essai Myod., 1830, p. 171.

Five males and six females (No. 730). This species was also originally described from Europe.

PARAPHANIA BEELZEBUL Wiedemann.

Tachina beelzebul WIEDEMANN, Aus. Zweif. Ins., 1830, II, p. 201.

Tachina imbrassus WALKER, List. Dipt. Ins., 1849, Pl. 4, p. 781.

Two specimens (No. 740). The species was originally described from Java, and Walker's specimens came from Hongkong, China.

HYPOSTENA SIGNIFERA, new species.

Male: Black, opaque, the pruinosity gray and black, calypteres white, wings hyaline. Front at narrowest point one-fourth as wide as either eye, the sides yellowish-gray pruinose, except on the lower part, which, with the face, cheeks, and lower part of the occiput next the eyes, is light-gray pruinose, an opaque dark brown streak near middle of each cheek; frontal bristles descending below middle of second antennal joint, no orbital bristles; antennae four-fifths as long as the face, the third joint two and one-half times as long as the second, arista thickened on its basal fifth, the penultimate joint shorter than long; proboscis less than half as long as height of head, robust, the labella very large; cheeks scarcely one-twelfth as wide as the eye height. Thorax yellowish-gray pruinose, a large spot in the middle of the front end and a broad fascia near the middle, velvet-black, the spot in front

sending five spurs from its posterior side; three pairs of postsutural dorso-central macrochaetae and three sternopleural ones; scutellum velvet-black, bearing three marginal pairs of long macrochaetae. Abdomen yellowish-gray pruinose, the first segment except the posterior margin, a large spot on the second extending nearly its entire length, and a similar spot on the third segment, velvet-black; venter largely velvet-black; first segment of abdomen bearing marginal, the second and third with discal and marginal macrochaetae, the bristly hairs long and suberect. Front pulvilli as long as the last tarsal joint. Third vein bearing one or two bristles near its base, elsewhere the veins are bare.

Length, 6 to 7 mm. Three specimens (No. 743).

Type.—No. 4004, U.S.N.M.

HYPOSTENA VITTIGERA, new species.

Male: Differs from the above description of *signifera* only as follows: Cheeks one-seventh as broad as the eye height, marked with an oblique brown streak anteriorly, in place of the vitta; third joint of antennae more than three times as long as the second. Thorax marked with five velvet-black vittae interrupted at the suture, the three middle ones united at their front ends and again behind the suture; scutellum, on nearly its apical half, gray pruinose; apex of fourth segment of abdomen polished, black, venter largely gray pruinose. Female differs from the male as follows: Front almost as wide as either eye, two pairs of orbital bristles; front pulvilli less than one half as long as the last tarsal joint. Length, 10 to 11 mm. Two males and one female (No. 742).

Type.—No. 4005, U.S.N.M.

Family DEXIIDAE.

DEXIA FLAVIPES, new species.

Male: Black, the antennae, face, cheeks, palpi, apex of proboscis, abdomen, except a dorsal vitta, femora, and tibiae, yellow; frontoalyp-teres white, the hind ones yellowish; wings hyaline, tinged with yellowish at the base and in the region of the costa. Front at narrowest part one-fifth as wide as either eye, the sides yellow pruinose, no orbital bristles, frontals in single rows, descending to insertion of antennae; face and cheeks pale yellow pruinose, sides of face bare, cheeks slightly more than one-third as broad as the eye height, vibrissae slightly above the level of the front margin of the oral opening; antennae two-thirds as long as the face, the third joint three times as long as the second, longest hairs of arista more than four times as long as its greatest diameter. Thorax yellowish-gray pruinose, marked with four black vittae; three pairs of postsutural dorso-central macrochaetae and two sternopleural ones; scutellum bearing three long marginal

pairs. Abdomen destitute of dorsal macrochaetae on the first segment, the others with discal and marginal. Third vein bearing three bristles at its base, veins elsewhere bare. Front tibiae slightly shorter than the first three tarsal joints, front pulvilli as long as the last tarsal joint. Length, 9 mm. A single specimen (No. 741).

Type.—No. 4006, U.S.N.M.

Family SARCOPHAGIDAE.

SARCOPHAGA PRIVIGNA Rondani.

Sarcophaga privigna RONDANI, Dipt. Ital. Prod., 1862, V, p. 109.

Nine specimens (No. 729), agreeing well with the description, which was founded on specimens from southern Europe.

SARCOPHAGA MELANURA Meigen.

Sarcophaga melanura MEIGEN, Syst. Besch. Eur. Zweif. Ins., 1826, V, p. 23.

A male specimen (No. 729), agreeing well with specimens from Europe in the U. S. National Museum.

Family MUSCIDAE.

MUSCA DOMESTICA Linnaeus.

Musca domestica LINNAEUS, Fauna Suec., 1761, p. 1833.

Thirteen specimens (No. 731) of this cosmopolitan species.

STOMOXYS CALCITRANS Linnaeus.

Stomoxys calcitrans LINNAEUS, Fauna Suec., 1761, p. 1900.

Eleven specimens (No. 733). This is also a nearly cosmopolitan species.

STOMORHINA OBSOLETA Wiedemann.

Idia obsoleta WIEDEMANN, Ans. Zweif. Ins., 1830, II, p. 355.

Two specimens (No. 673). This species was originally described from China.

GRAPHOMYIA MACULATA Scopoli.

Musca maculata SCOPOLI, Ent. Carn., 1763, p. 326.

One male and three females (No. 734), agreeing well with specimens from Europe in the U. S. National Museum.

CALLIPHORA ERYTHROCEPHALA Meigen.

Musca erythrocephala MEIGEN, Syst. Besch. Eur. Zweif. Ins., 1826, V, p. 62.

Two specimens (No. 739), agreeing well with specimens from the United States and Europe.

CALLIPHORA LATA, new species.

Male: Head black, the facial ridges and anterior part of the oral margin reddish-yellow, eyes almost contiguous, frontal vitta obliterated at the narrowest part of the front, sides of front, face, and cheeks yellowish-gray pruinose, hairs of cheeks and on the occiput next the eyes black, remaining hairs of occiput pale yellow; antennae blackish-brown, apex of second joint and base of the third largely reddish yellow, the third three times as long as the second; arista plumose on its basal three-fourths; proboscis black, palpi yellow. Thorax and scutellum subopaque, black, thinly light gray pruinose, the macrochaetae and short hairs black, three pairs of postsutural dorso-central macrochaetae and three sternopleural ones; prothoracic spiracles yellow. Abdomen polished, dark green, thinly light gray pruinose. Legs black. Wings hyaline, slightly tinged with yellowish at the base and toward the costa; calypteres dark brown. Length, 11 to 13 mm. Nine specimens (No. 727).

Type.—No. 4007, U.S.N.M.

LUCILIA CAESAR Linnaeus.

Musca caesar LINNAEUS, Fauna Suec., 1761, p. 1828.

Somomya japonica BIGOT, Ann. Soc. Ent. France, 1877, p. 254.

Ten specimens (No. 728). This species has previously been recorded from Japan by Dr. Loew.¹

MUSCINA ANGUSTIFRONS Loew.

Cyrtoneura angustifrons LOEW, Wiener Ent. Mon., 1858, p. 111.

Twelve specimens (No. 732). The species was originally described from Japan.

Family ANTHOMYIIDAE.

SPIOGASTER FLAVIPES, new species.

Male: Head black, gray pruinose, except the frontal vitta, which is not obliterated in any portion of its course, and does not bear a pair of macrochaetae; front at narrowest part one-sixth as wide as either eye; antennae reaching slightly below the lowest third of the face, yellow, the third joint almost twice as long as the second, arista plumose to the tip, the longest hairs more than four times as long as its greatest diameter; proboscis and palpi yellow. Thorax black, the lateral margins yellow, dorsum densely yellowish-gray pruinose, and marked with four black vittae; three pairs of postsutural dorso-central macrochaetae and three sternopleural ones; scutellum, except its extreme base, yellow, a large, yellow spot below each hind calypter. Abdomen polished, yellow, an interrupted dorsal vitta not extending beyond

¹ Wiener Ent. Mon., 1858, p. 110.

the middle of the last segment, black; first segment destitute of dorsal macrochaetae, the three following bearing discal and marginal ones. Legs, including the coxae, yellow. Wings hyaline, tinged with pale yellow at the base and toward the costa, veins bare, costal spine as long as the crossvein at base of discal cell; front calypteres white, the hind ones yellow. Length, 12 mm. A single specimen (No. 741).

Type.—No. 4008, U.S.N.M.

Family SCATOPHAGIDAE.

SCATOPHAGA STERCORARIA Linnaeus.

Musca stercoraria LINNAEUS, Fauna Suec., 1763, p. 1861.

Four specimens (No. 684) of this almost cosmopolitan species. It has previously been recorded from Japan by Dr. Loew.¹

SCATOPHAGA MELLIPES, new species.

Male: Occiput, ocellar triangle, and sides of front black, gray pruinose, frontal vitta reddish brown, next the antennae reddish yellow; face, cheeks, and lower part of occiput yellow and yellow pruinose; antennae on the first two joints and extreme base of the third yellow, remainder of the third joint black; arista pubescent, brown, the base yellow; proboscis brown, palpi yellow, its short hairs and the bristles of the under side yellow, those at the apex black. Thorax black, gray pruinose, and marked with four brown vittae, five pairs of dorso-central macrochaetae, hairs of mesonotum short, black, those of the pleura long, abundant, yellow; one sternopleural macrochaeta; scutellum black, gray pruinose, bearing four long macrochaetae. Abdomen black, olive-gray pruinose, quite thickly covered with rather long yellow hairs intermixed with a few black ones. Coxae black, gray pruinose, remainder of legs yellow, femora destitute of macrochaetae, except a pair on the posterior side of the middle ones near the tip, rather thickly covered with quite long yellow hairs, those on upper side of middle ones and toward the tips of the hind ones chiefly black, hairs of tibiae brown or black; front tibiae destitute of stout macrochaetae, the middle ones each bearing two on the anterior and three on the posterior side, the hind ones with three on the anterior and three or four on the posterior side, beside those at the apices. Wings grayish hyaline, at the base and toward the costa strongly tinged with yellow, crossveins not clouded with brown. Halteres yellow.

Female: Differs from the male as follows: Hairs of dorsum of abdomen very short and chiefly black, those of the legs also short, all femora and tibiae bearing several stout black macrochaetae. Length, 10 to 12 mm. Five males and one female (No. 684).

Type.—No. 4009, U.S.N.M.

¹ Wiener Ent. Mon., 1858, p. 112.

Family HELOMYZIDAE.

HELOMYZA RUBIDA, new species.

Male and female: Yellowish, opaque, except the front, gray pruinose, the hairs and bristles black; face and cheeks yellow pruinose, third joint of antennae orbicular, the arista brown, pubescent; no macrochaetae near the vibrissae. Thorax bearing five pairs of dorso-central macrochaetae, one sternopleural, no humeral, and none above the front coxae; pleura, besides the macrochaetae, bare. All femora bearing several macrochaetae, front and hind tibiae each bearing only a pre-apical one. Wings yellowish hyaline, the small and posterior cross-veins bordered with brown, a large brown spot at apex of second vein and a small one at apices of the third and fourth, costal bristles rather long. Length, 6 mm. Four males and two females (No. 703).

Type.—No. 4010, U.S.N.M.

Family MICROPEZIDAE.

NERIUS FEMORATUS, new species.

Male and female: Head yellowish, a large, polished, black spot back of each eye, front marked with two opaque, velvet-black vittae extending its entire length and separated by a yellow interval; a black spot between each eye and the adjacent antenna; under part of the head yellow pruinose anteriorly, the remainder white pruinose; antennae yellow, the first joint, upper edge of the second, and the upper, apical, and lower edges of the third, except on the base of the latter, brown; first joint slightly broader than long, the second prolonged on its inner side nearly to the middle of the third, the latter almost twice as long as wide; style white, the base yellow; proboscis brown, the minute palpi yellow. Dorsum of thorax brown, usually marked behind the suture with two or four yellowish vittae; two pairs of dorso-central macrochaetae; sides of thorax and the pleura yellow, white pruinose except a broad, black median vitta; one sternopleural macrochaetae, pleura otherwise destitute of macrochaetae and hairs; scutellum brown, a median yellow vitta, a subapical pair of macrochaetae and a shorter discal pair, otherwise the scutellum is bare. Abdomen brown, destitute of macrochaetae, the hairs sparse, brown and yellow; hypopygium of male exserted, hanging down, nearly cylindrical, as long as the last four abdominal segments, consisting of three joints which are successively narrower, the third spine-like; ovipositor of female polished, blackish-brown, as long as the last three abdominal segments taken together. Legs brown, the front coxae, a band on each femur beyond its middle, and the tibiae, yellow; under side of front femora of male ciliate with short spines, inner side of front tibiae and under side of first joint of the front tarsi ciliate with very short spines, other legs of

male and all legs of female bare. Wings grayish-hyaline, the veins yellowish-brown. Halteres yellow. Length, excluding the hypopygium and ovipositor, 9 mm. Three males and two females (No. 692).

Type.—No. 4011, U.S.N.M.

Family ORTALIDAE.

EUPYRGOTA, new genus.

Closely related to *Pyrgota*, but the third antennal joint is longer than the second. Front noticeably widening below, in profile only slightly projecting, the face only slightly retreating; no ocelli; antennae almost as long as the face, the first joint twice as long as broad, the second one and one-half times as long as the first, the third tapering slightly to the apex, which is broadly rounded, the upper edge concave, the lower convex, one and one-fourth times as long as the second; arista bare, inserted slightly before the middle of the third antennal joint; sub-antennal furrows extending to lowest fifth of the face, eyes almost twice as high as broad, palpi clavate, proboscis very thick. Abdomen of male greatly constricted at the base, consisting of five segments besides the very large hypopygium, the first segment twice as long as wide, more than twice as long as the four following segments taken together. Wings large, third and fourth veins strongly diverging toward their apices, first vein beyond the humeral crossvein thickly beset with short bristles, the others bare; posterior outer angle of the anal cell prolonged in a pointed lobe; small crossvein beyond the middle of the discal cell.

Type.—The following species:

EUPYRGOTA LUTEOLA, new species.

Male: Occiput yellowish brown, front, face, and cheeks reddish yellow; front, except next the eyes, opaque, a brown spot near each upper angle; face and cheeks polished; two black lines extend from the antennae to the lower ends of the subantennal furrows, then diverge and extend to the oral margin near the middle of its lateral portion; a black streak extends downward from each eye halfway to the oral margin; antennae reddish yellow, arista yellowish white, palpi yellow, proboscis brown. Thorax somewhat polished, yellowish white, two median brown vittae extending from the anterior end to halfway beyond the suture, and on either side of them a blackish brown vitta which begins a short distance from the front end of the thorax and extends across it, the side of the scutellum and of the metanotum, the two vittae connected with each other by a black fascia at the base of the scutellum, and on the outer side each throws off a spur which extends along the transverse suture to the insertion of the wing; pleura yellow, mottled with black, bearing one sternopleural macrochaeta and many black bristly hairs; scutellum yellow, the front corners and

extreme base blackish brown, bearing three pairs of bristles. Abdomen somewhat polished, brown, the base and front angles, also the hypopygium, yellow, the latter almost as long as the first abdominal segment. Legs yellow. Wings yellowish-hyaline; a large brown spot fills the apices of the marginal and submarginal and a large portion of the apex of the first posterior cell; second vein very undulating, bearing a stump of a vein from the underside of the last fourth of its length. Halteres yellow. Length, 16 mm. Two specimens (No. 691).

Type.—No. 4012, U.S.N.M.

RIVELLIA BASILARIS Wiedemann.

Trypeta basilaris WIEDEMANN, Ausser. Zweif. Ins., 1830, II, p. 510.

Seven specimens (No. 700). The species was originally described from Sumatra.

Family TRYPETIDAE.

TEPHRITIS PUNCTIGERA, new species.

Male: Yellow, the antennal arista, except at the base, usually one or two spots on the anterior end of the mesonotum, an interrupted fascia near the front end and usually a spot near the posterior end of the pleura, a dot behind the insertion of each wing, the middle and lower edge of the metanotum, and a transverse row of four spots on the abdominal segments 2 to 4, black, the spots on the second abdominal segment sometimes wanting; hairs and bristles yellow, scutellum bearing four bristles. Wings brown, changing into black at the apex, quite thickly covered with whitish drops, costal and subcostal cells hyaline, a small brown spot on the humeral crossvein, another midway between it and the apex of the auxiliary vein, one on the apex of the latter vein, and a fourth on apex of first vein, with rarely a fifth spot between the last two; between the apices of the first and second veins are three hyaline spots; between the apices of the second and third veins is only one, situated close to the second vein; first posterior cell containing two large and from three to six small ones, the extreme apex of this cell wholly black; the first basal cell contains one or two hyaline drops, situated in its apical half; discal cell grayish along its posterior side for three-fourths its length, the remainder contains from four to six hyaline drops; crossveins at both ends of this cell bordered with brown; small crossvein oblique, at almost twice its length from the hind one; first and third veins bristly.

Length, 7 mm. Three specimens (No. 704).

Type.—No. 4013, U.S.N.M.

TRYPETA VIBRISSATA, new species.

Male and female: Head and its members yellow, the macrochaetae and the antennal arista, except its base, black; vibrissae well developed, proboscis robust, not geniculate. Thorax light yellowish, marked

with three pairs of orange-yellow vittae, the middle pair extending from the front end to a point midway between the transverse suture and the base of the scutellum, a pair of black dots midway between their posterior ends and the base of the scutellum; second pair of vittae usually changing into black at their posterior ends, the third pair bearing a black dot at the transverse suture; two black dots back of the insertion of each wing; hairs of thorax short, yellow, the bristles black; pleura with a broad orange-yellow vitta in the middle; scutellum light yellow, a spot at each anterior angle, and the apex black, bearing four bristles; metanotum dark yellow, marked with a median black vitta. Abdomen yellow, yellowish gray pruinose, segments 2 to 6 each bearing a transverse row of four black dots, hairs and bristles chiefly black; ovipositor of female yellow, its first segment almost as long as the last four segments of the abdomen taken together. Legs and halteres light yellow. Wings hyaline, the costal margin, extending beyond the tip of the fourth vein, and three cross-bands, extending obliquely from it to the hind margin of the wing, pale yellow, the broad apex and a narrow margin of the costal border toward its apex, also a narrow border to the crossbands, except on the lower side of the first, brown or black; a black dot at the upper end of the humeral crossvein, and another at the apex of the first vein; the first yellow cross band extends to the apex of the sixth vein, and includes all of the anal cell and the base of the discal; it incloses a large hyaline spot in the second basal cell; the second yellow cross-band includes the small crossvein and terminates slightly beyond the middle of the distance between the fifth and sixth veins; the third band includes the hind crossvein and terminates at the apex of the fifth vein; first vein bristly, the others bare, small crossvein oblique, situated slightly before the middle of the discal cell, hind crossvein noticeably oblique.

Length, excluding the ovipositor, 7 mm. Three males and one female (No. 701).

Type.—No. 4014, U.S.N.M.

Family SCIOMYZIDAE.

EGGIZONEURA FORMOSA Wiedemann.

Scatophaga formosa WIEDEMANN, Ausser. Zweif. Ins., 1830, II, p. 447.

Dryomyza maculipennis MACQUART, Dipt. Exot., 1849, Supp. IV, p. 273 [246].

Dryomyza gigas VOLLENHOVEN, Versl. Med. Akad. Wet., 1863, p. 15.

Four males and four females (No. 683). The above synonymy has already been published by Osten Sacken.¹ The species was originally described from Japan, and Macquart's specimen came from the East Indies.

¹ Wiener Ent. Zeit., 1882, p. 21.

Family SAPROMYZIDAE.

SAPROMYZA SEXPUNCTATA Meigen.

Sapromyza sexpunctata MEIGEN, Sys. Besch. Eur. Zweif. Ins., 1826, V, p. 262.

Three specimens (No. 702), agreeing well with the descriptions of this European species.

SAPROMYZA EUARESTA, new species.

Head yellow, the center of the occiput, two narrowly separated vittae on the front, two oblique vittae extending from the antennae to the occiput, crossing the cheeks, also a transverse spot above the middle of the anterior edge of the oral margin, dark brown; antennae yellow, the third joint brown in the middle, oval, only slightly longer than broad, arista brown, pubescent; palpi and middle of proboscis yellowish-brown. Thorax, including the pleura, yellowish, opaque, thinly gray pruinose, marked with irregular brown, not pruinose, spots and dots; hairs and bristles black; scutellum brown, a yellow vitta on either side of the middle, bearing four macrochaetae; metanotum brownish-yellow. Abdomen opaque, yellow, segments two to five or six each marked with a posterior brown fascia extended forward in the middle and near the sides, crossing the segments, a marginal row of macrochaetae on segments two to six. Coxae and femora brown, apices of femora and the whole of the tibiae and tarsi yellow. Wings dark brown, marked with numerous whitish-hyaline spots and drops; costal cell whitish-hyaline, crossed near the middle by a brown spot; space between apices of auxiliary and first vein wholly brown; between first and second veins with four or five whitish spots; two in extreme apices of the submarginal and first posterior cells; from four to six in the discal, the ends of this cell brown; small crossvein noticeably before the middle of the discal cell; all veins bare. Halteres yellow. Length, 3.5 mm. Three specimens (No. 705).

Type.—No. 4015, U.S.N.M.

Family AGROMYZIDAE.

CRYPTOCHAETUM GRANDICORNE Rondani.

Cryptochaetum grandicorne RONDANI, Spec. Ital. Ord. Dipt., Agrom., 1875, p. 7.

Eighteen specimens (No. 745), agreeing well with specimens from Italy in the U. S. National Museum.

Family DROSOPHILIDAE.

DROSOPHILA OBSCURA Fallen.

Drosophila obscura FALLEN, Dipt. Suec., Geomyz., 1823, p. 6.

Three specimens (No. 746), agreeing well with the descriptions of this European species.